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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/650,058	08/29/2000	Santosh P Abraham	2-48	8757

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EXAMINER	
ZHONG, CHAD	

ART UNIT	PAPER NUMBER
2152	

DATE MAILED: 02/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/650,058	ABRAHAM ET AL.	
	Examiner	Art Unit	
	Chad Zhong	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 September 2004* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-5 and 7-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-5 and 7-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

OFFICE ACTION

1. This action is responsive to communications: RCE, filed on 09/03/2004.

2. Claims 2, 3-5, 7-9 are presented for examination. In RCE, filed on 09/03/2004:

claims 2-3, 5, 7-8 are amended;

claims 1 and 6 are canceled;

claims 4 and 9 remain unchanged.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371 (c) of this title before the invention thereof by the applicant for patent.

4. Claims 3-5, 2, 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Kronz, US 6,577,610.

5. As per claim 3, Kronz teaches a method for use in a wireless system (Fig 2), the method comprising the steps of:

sending data from a transmitter to a group of N wireless endpoints (Fig 2, item 220) over a downlink communications channel comprising a sequence of time slots (Fig 3, item 350, 320);

detecting an imbalance such that some of the time slots convey more data than other time slots (Col. 8, lines 45-67, wherein the slotted aloha system is a form of TDMA, further it is well known in the art each TDMA frame is divided into time slots, moreover, each time slot is a channel for that particular user/client to transmit information. Thus, each time slot here

represents a channel between sender and receiver);

shifting some of the data from least one time slot to another time slot for reducing the detected Imbalance (Col. 8, lines 45-67).

6. As per claim 4, Kronz teaches wherein the detecting step includes the steps of:

measuring the amount of data sent in each of M timeslots to the N wireless endpoints; and

comparing the measured data for at-least-one of the M timeslots to others of the M timeslots for detecting the imbalance (Col. 8, lines 45-67, wherein the channel time slots themselves are compared against each other to detect the imbalance within slots).

7. As per claim 5, Kronz teaches a method for use in a wireless system, the method comprising the steps of:

sending data to a group of N wireless endpoints over a communications channel comprising a sequence of time slots (Fig 1 and Fig 3);

detecting an imbalance such that every other time slot of the sequence conveys more data than the remaining time slots of the sequence (Col. 8, lines 45-67); and

shifting some of the data from at least one of the every other time slots to at least one of the remaining time slots for reducing the detected imbalance (Col. 8, lines 45-67).

8. As per claim 2, Kronz teaches a method for use in a transmitter, the method comprising the steps of:

using a downlink channel from the transmitter to convey information to a group of devices (Fig 2, wherein item 210 is transmitting information to item 220); and

load balancing the downlink channel (Col. 8, lines 45-65),

wherein the downlink channel comprises a sequence of dwells, each dwell having a time period (see for example, Fig 3, item 320); and

wherein the method further comprises the step of detecting that at least one dwell of the sequence conveys more downlink information than the other dwells of the sequence as a prerequisite to performing the load balancing step (see for example, Col. 8, lines 45-67).

9. As per claim 7, Kronz teaches apparatus for use in a communications system, the apparatus comprising:

a transmitter for providing a downlink channel to convey information to a group of endpoint devices (Fig 2, wherein 210 is transmitting to 220); and,

a processor for performing load balancing on the downlink channel (Col. 8, lines 45-67); the remainder of claim 7 is rejected for the same reasons as rejection to claim 1 above.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kronz, US 6,577,610, in view of "a cellular wireless local area network with QoS Guarantees for Heterogeneous Traffic", Choi et al. (hereinafter Choi), 1997.

12. As per claim 8, Kronz teaches apparatus for use in a wireless system, the apparatus comprising:

a scheduler for retrieving the stored data and for measuring the amount of stored data transmitted in each of M timeslots to the N wireless endpoints, and for comparing the measured data for at-least-one of the M timeslots to others of the M timeslots for detecting an imbalance in

the transmission (Col. 8, lines 45-67, furthermore, an scheduler is inherently available in a TDMA system, because plurality of devices are sharing one channel, and there can not be a scheduling conflict), and

for shifting some of the data from at least one time slot to another time slot for reducing the detected imbalance (Col. 8, lines 45-67).

13. Kornz does not teach a memory for storing data for transmission from a source to a group of N wireless end points via a downlink channel.

14. Choi teaches a memory for storing data for transmission from a source to a group of N wireless end points via a downlink channel (see for example, pg 1, Col. 2, 3rd paragraph; pg 4, '4.2 Stop-and-Go Queueing', wherein the queue is used for the advantages of quality of service guarantees in the network).

15. It would have been obvious to one of ordinary skill in this art at the time of invention was made to combine the teaching of Kronz and Choi because they both dealing with wireless systems. Furthermore, the teaching of Choi to allow
a memory for storing data for transmission from a source to a group of N wireless end points via a downlink channel
would improve the quality of service guarantees for Kronz's system by providing proper queuing prior to transmission.

16. As per claim 9, claim 9 is rejected for the same reason as the rejection to claim 8 above.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure. The following patents and publications are cited to further show the state of the art with respect to "A load balancing technique for a wireless Internet access system".

i. "MMTP – Multimedia Multiplexing Transport Protocol" Luiz Magalhaes et al., Spring 2000.

ii. US 6577610 McMillen.

iii. US 5239649 McBride et al.

iv. US 5860137 Raz et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chad Zhong whose telephone number is (571)272-3946. The examiner can normally be reached on M-F 7:15 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BURGESS, GLENTON B can be reached on (571)272-3949. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CZ
December 19, 2004

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